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ABSTRACT

This pamphlet is a non-technical description of common household arthropod pests in Maryland. Since most of the pests can be found in houses throughout North America, this publication has a wide geographic range of use. General discussions of arthropod structure, growth and development, and metamorphosis are given before the pages on specific pests. Pests included are ants, flies, bedbugs, body lice, ticks, carpet beetles, centipedes, millipedes, cockroaches, moths, fleas, crickets, springtails, slugs, termites, spiders, and sowbugs. For each pest, a picture or line drawing and information on life cycle and habitats, control or management practices, and a description are given. No specific pesticide information is presented in this pamphlet. (MR)

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COOPERATIVE EXTENSION SERVICE • UNIVERSITY OF MARYLAND • COLLEGE PARK, MARYLAND

HOUSEHOLD AND STRUCTURAL PESTS

MEP 307

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INSECTS

GENERAL

Arthropoda is the largest group in the animal kingdom and includes organisms such as lobsters, crabs, crayfish, millipedes, spiders, scorpions, mites and a special class called insects. This class contains butterflies, bees, ants, flies, aphids, and many more. By pure numbers, the *Arthropoda* are the dominant form of animal life on earth, with millions contained in almost every acre of land. Fortunately, only a small portion are serious pests to man's interests. Insects, as a class, are the most adaptable of all animals. They can be readily found living in the earth's extremes of heat, cold, drought and darkness.

Beneficial species pollinate ornamental flowers and many agricultural crops thus providing us with many of our fruits and vegetables. They work in many specialized areas such as the production of silk and honey, and they also serve as a food source for many higher animal forms.

Some insects pose a real threat to man, either directly or indirectly. The damage to crops, stored products, man-made structures, and the health of man and animals is sometimes tremendous. Many insects can be the vectors of livestock and human diseases while others damage man-made structures or eat foodstuffs. Still others are undesirable because they are a general nuisance to man in his day-to-day activities.

STRUCTURE

An adult insect's body is elongated and divided into three regions, the head, thorax and abdomen. The eyes and antennae are located on the head, and the legs and wings are connected to the middle region, the thorax. All adult insects have six jointed legs, and these are sometimes used for identification purposes since they can vary slightly between species. The adult may have no wings or be equipped with one or two pair.

Wings and mouthparts are most important in identification. Some insect mouthparts are designed for chewing while others are adapted for piercing a food source and sucking out the nutrient material.

The insect's body is surrounded by a hardened material which not only protects the internal organs but also acts as the insect's skeleton (exoskeleton). Breathing is done through a series of tubes that travel from the body surface to the internal areas, allowing oxygen from the outside to travel directly to the tissues.

GROWTH AND DEVELOPMENT

As an insect matures, it grows in size and often changes form. The rigid shell that covers the body and protects the insect as an exoskeleton will expand only so far. This exoskeleton must be shed at intervals to allow for the growing process. This shedding or "molting" process can occur many times as the organism matures. Before the old shell is cast aside, a new one, which will allow for growth, is already being formed underneath the old.

Insects, between these successive molting processes, are called "instars", and with each molt, the insect will differ in size and form from the preceding instar. This changing process will continue until the adult form is reached. Almost all insects change in shape and size as they mature, and this development process is referred to as metamorphosis.

METAMORPHOSIS

All insects carry on these growth and molting processes, and the successive instars differ in form and size. Some insect species show little variation as they mature, changing only in size. Others undergo an extreme transition where the adult fails to resemble the young insect in any way. This is evidenced by the development of caterpillars into butterflies. Every species follows one of these developmental series of events or a process that falls somewhere between the two.

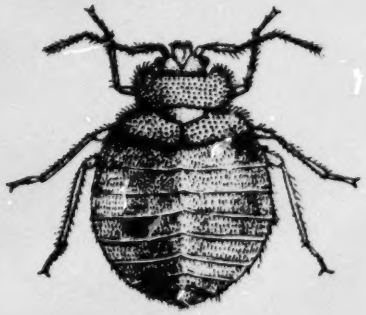
A small number of insect species develop without any gross changes whatsoever. As they develop, they change only in size. The adult insect lays eggs, and the newly hatched young look just like miniatures of the adult. As the young insects grow, they proceed through a series of molts, maintaining their basic appearance, but increasing in size. Some of these insect species that reach maturity without going through metamorphosis also add additional body segments as they mature. Common examples of these are the silverfish and springtails.

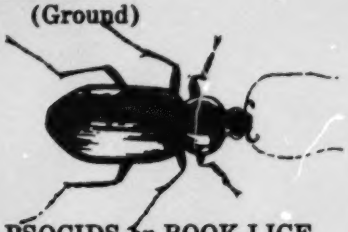
Gradual Metamorphosis: Species that are characteristic of this type of development differ from the preceding process in that the eggs hatch into nymphs. The maturing insect (nymph) looks somewhat like the adult all through its development. The nymph is equipped with wing buds which will not fully develop into functional wings until the final molting stage. The mouthparts, legs and antennae are basically the same as the adults. Some nymphs live in water and breathe by gills until they mature. Examples of insects that develop by gradual metamorphosis are cockroaches, crickets, true bugs, lice and cicadas.

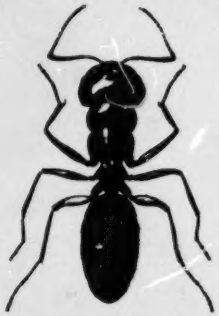
Complete Metamorphosis: Most of the insects mature by this last growth process. They do not make a gradual change from nymph to adult. The immature and mature forms differ so greatly that one would not believe them to be the same insect, and quite often they live in very different habitats.

Their development proceeds through four stages. A *larva* hatches from the *egg*. In this stage, the insects are referred to as caterpillars, grubs or maggots, and it is at this time that many insects do their greatest damage. The larva shows continued growth and molting and may proceed through several instars. The larva may or may not have legs and the head may lack development. If the adult is to be winged, the wings will begin to develop internally. At the end of the larval stage, the organism slows its activity and forms a smooth, hard, protective, outer covering and enters into the *pupal* stage. The insect does not feed during this period and is usually inactive. The final molt occurs at the end of the pupal stage, and the *adult* form emerges. Shortly thereafter, colors develop, and the wings expand and harden. Many familiar insects follow this pattern such as maggots to flies, grubs to beetles and caterpillars to moths and butterflies. Other common groups with complete metamorphosis are fleas, wasps, hornets and bees.

Other arthropods can be pests too, such as mites, ticks, spiders, millipedes and scorpions. These insect relatives molt and have other characteristics like insects but none have a pupal stage, nor do any have wings.

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
ANTS	Insects with narrow connection between thorax and abdomen; antennae elbowed; active as adults; yellow, tan, brown, reddish-brown, black.	Usually have colony outside, workers come inside, attracted to sugars or greases; winged reproductives sometimes released within a house and sometimes confused with termite reproductives. Two species can nest inside: carpenter ants and the pharaoh ants, an exceedingly small, yellow ant. Ants other than carpenter ants do not cause damage but are annoying.	*Outside:* Dust or spray in nest openings around foundations, especially at points where ants may be entering. *Inside:* Paint or spray baseboards, cracks, door frames. Do not allow children or pets on treated surfaces until dry. Do not contaminate food or utensils. *Use in limited areas only. Do not treat extensively.* Bait at trails. Place bait in protected places. Keep bait away from children and pets. Do not use dusts where children or pets may be exposed.
ATTIC FLIES (Cluster flies) (See Cluster flies, Face flies, House flies, Stable flies)			
BEDBUGS 	Round-oval, flattened, reddish-brown. Several species: human bedbug and bat bedbug most common, more rarely found on swallows and swifts.	Feed primarily at night, hide during day in folds of mattress and bedding, behind baseboards and in any cracks in bed, behind pictures, loose wallpaper, bedroom furniture, under lamp bases, etc. Check for bats and birds in attic also.	Spray slats, springs and frame of bed thoroughly. Spray mattress and folds lightly. Paint or spray baseboards, wall cracks, bedside furniture, pictures, etc. Wash bedding. Allow all sprayed surfaces to dry completely before use. Replace used bedding with clean fresh bedding. If bugs are seen after 2 weeks, re-treat automatically.
BEES, HONEY BEES (See also Wasps, Hornets, Carpenter bees)	Brown, fuzz on head and thorax, less than ½ inch long.	Honey bees sometimes nest in house walls. Opening to nest is on the outside of house.	Apply aerosols, sprays or dusts on nest through holes drilled to comb area. Wax moths, carpet beetles and insects attracted to the honey can become problems if all comb, honey and dead bees are not removed after control. Bees can also be removed by trapping.

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
BEETLES (Ground) 	The most common ground beetles found inside are black, over ½ inch long. Other beetle larvae are ¾ inch long with 3 pairs of legs on the front half.	Ground beetles may migrate inside in fall. They do no damage. Control is usually not necessary.	Apply insecticide directly, sweep up or vacuum, crush. Tightening up around doors and windows will stop entrance of beetles. Activity is over a short period of time. Remove mulch or high grass around doors, replace with gravel cover.
PSOCIDS or BOOK LICE	Tiny, yellowish, wingless insects; antennae slender and long. These insects are not really lice and do not harm people.	Book lice are worse in warm, humid conditions. Feed on starches and molds which grow on cereal grains, books, glue, sugars, and any other material which will support fungi in the correct environment.	Remove books and papers from damp storage areas. Spray directly and in cracks. Lower humidity by air-conditioner, dehumidifier or fan. Raise temperature to 60-70 degrees F. Discard infested materials, clean shelves, replace shelf paper.
BOXELDER BUGS	Adults: Flat, ½ inch long, black with red stripes on thorax and wings. Nymphs a brighter red.	Invade houses in early fall. Build up on seed-bearing boxelder trees only. Overwinter inside house. Fly inside on warm, winter days. No damage to houses or furnishings.	Spray bugs as they leave tree or crawl on house. Tighten up windows, doors, caulk cracks. Remove female, pod-bearing boxelder trees, if possible.
CARPET BEETLES	*Black carpet beetles.* Adults: black, oval; twice as long as wide, less than ¼ inch. Larva: elongate, tapering from head to tail, reddish-brown to dark brown, long tail of hairs. *Furniture or common carpet beetles (Buffalo bug).* Adults: round with specks of white, yellow, black; smaller than black carpet beetle. Larva: oval, hairy; tail hairs short; yellow to dark brown.	Feed on animal fibers — woolens, felt, fur, feathers, carpets, sweaters, etc. Damage done by larvae. Cast skins will be found in large numbers. Larvae will migrate. Adults will lay eggs on material and in cracks, etc. One species feeds on cereal grain products. (Clothes moths are seldom found today. Dry-cleaned, unsoiled fabric will completely resist clothes moth infestation.)	Find and destroy or clean infested material. Spray where infestation occurs. Along edges of rugs, under heavy furniture, baseboards, molding, closets, cracks, etc. where larvae may be feeding. Store woolens in tight containers with naphtha or para flakes. Check stored carpets, etc. Move large furniture to inspect for infestations. *DO NOT* spray clothes or furniture.

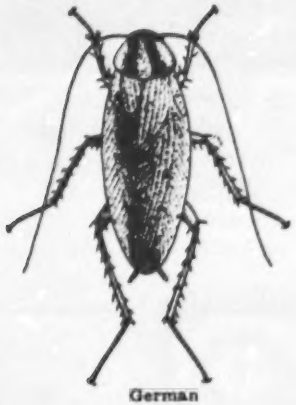
PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
CARPENTER ANTS 	Reproductives over ½ inch long, black. Workers smaller, black, under ½ inch but larger than most other ants.	Nesting site in wood — nests started in wood damaged by fungus which means water damage at some point. Nests can be extended into sound wood. Food is live and dead insects, and sugars. The largest ant in U. S.	Spray surfaces where ants walk. Puff dust into galleries where possible. Usually these ants nest in rotted wood outside. May forage into houses. Check for areas with leaks or water damage. Replace damaged wood.
CARPENTER BEES	Large bees (nearly 1 inch) with yellow thorax. Like bumblebees but with shiny rather than fuzzy black abdomen.	Bore into wood, especially end of boards used in trim, porches, sheds. Redwood and unfinished wood with nail holes is especially attractive.	Kill flying adults with aerosol. Apply spray or dust in tunnels. Let bees return. Close hole with deep plug of putty or caulking compound in 1 or 2 days.
CENTIPEDES	Many body segments, long antennae, legs and tail appendages.	Centipedes are predaceous and do no damage. They do not invade houses in large numbers like millipedes. The only centipede which becomes a nuisance is the house centipede which is beneficial and occurs in isolated areas of house.	Spray individuals directly or crush them.

CIGARETTE BEETLE: A common pantry pest. Check herbs, spices, paprika, cereals, condiments. (See Pantry pests)

CLOTHES MOTHS: Leave silken tubes or white granular frass. Seldom found. Damage is usually by carpet beetles. Adult moths with less than ½ inch wing span; yellow, fringed wings. (See Carpet beetles)

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
CLOVER MITES	Very small, (1/64 inch) reddish-brown arthropods with 8 legs; front pair much longer than others.	Do not bite humans or damage houses or furnishings. Often build up in new, well-fertilized lawns, especially where grass is rank. Build up in spring and again in late fall. No problem in summer. Mites become active in late winter on the sunny side of house. Many may have already moved onto the side of house when they are noticed inside.	*Inside:* Spray in cracks and areas where mites hide. *Outside:* remove all grass from strip 24 inches wide on sides of house where migration occurs. Cover area with polyethylene sheet to keep weeds down, and cover with gravel. Miticide can be sprayed on adjacent yard and sides of house up to windows. Spray in cracks, under shingles, around window sills, etc. An interesting possibility of control might be application of sulphur dust on barrier. This has not been tested but is safe.
CLUSTER FLIES or ATTIC FLIES (See also House flies, Stable flies)	Flies slightly larger than house fly, with light-colored thorax.	Cluster on warm sides of buildings in fall, enter through cracks, eaves and around windows. Buzz around inside on warm days. No damage; not attracted to food.	Space sprays or residual sprays in unoccupied rooms; e.g. attics, storerooms. Do not contaminate foods. Resin strips can be used in unoccupied rooms. Do not place where food is prepared or people or animals are confined. Caulk cracks and tighten around windows. Immature flies (maggots) are parasitic on earthworms, so control of flies in this stage is not recommended. Baits are most effective for house flies.

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICLS
COCKROACHES	*German:* ½ inch long, tan, brown, two black stripes, length of pronotal shield or entire length of nymph (leaving yellow center stripe). *Brown banded:* About same size as German, pronotum without stripes, yellow-bordered and yellow-mottled. Flies readily. *American:* Almost 1½ inches long, reddish-brown. *Oriental:* Smaller than American; black; females wingless; males with short wings; often outside; always in moist areas; can stand cool temperatures.	*German:* Mainly in kitchen and apartments. *Resistant* to most insecticides in some areas. *Brown banded:* Found in all parts of house, especially in warm places (clock motors, appliances, etc.) *American:* Largest cockroach, likes warmth and moisture; in commercial areas, warehouses, apartments, sewers. *Oriental:* Found in moist places: drains, gutter splashes, under rocks, etc. "waterbugs".	Spray or paint around baseboards, behind appliances, under drawers and shelves, in cabinets, under sink. Spot treat around radios, electric clocks, behind pictures, water pipes, etc. (especially for brown banded roaches). Flush to get roaches out of hiding so they contact insecticide or to show numbers and hiding places. *Do not contaminate food! Do not treat entire walls and floors.*



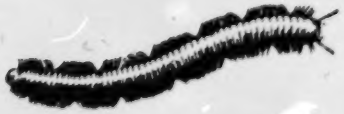
German

Brown banded

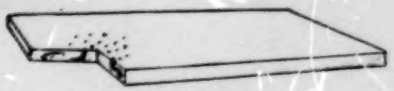
American

Oriental

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
CRICKETS	*Field cricket:* ¾ to 1 inch long; black with wings. *Ground cricket:* Smaller, less than ½ inch, also black. *Camel or cave cricket:* Mottled brown; wingless with very long legs and antennae; humped appearance (always in dark, relatively unused areas); ¾ inch long.	Field and ground crickets build up through summer on weeds, especially in low places and migrate inside in late summer, early fall. They are annoyances and will eat clothes, especially if they are soiled. Camel or cave crickets are harmless.	Inside in areas where there is no traffic but where crickets hide (basements, etc.), use residual insecticide with spot treatment. For control outdoors before "out migration" spray in ditches and weedy places. Crickets must enter houses through cracks, or spaces around doors and windows. Caulk and tighten up spaces. Baits will help.
DRAIN FLIES	Adult flies: Small, less than ⅛ inch long; gray or black; 2 wings; fly in short "hops".	Immature stage lives in gelatinous lining or scum in bathroom drains and sometimes in the sink overflow if hair and water often drain there. All plumbing below the traps may harbor moth fly larvae, and adults can emerge if trap is dry. Adults emerge and often fly to windows. May leave bathroom and fly to other rooms where they die.	Find the infested drain, clean scum out with brush or wire wrapped with wax paper. Clean overflow of hair. Clean up wet lint under washing machine. Do not let water evaporate from sink and commode traps. Treat adults with aerosols.
DRUGSTORE BEETLE (See Pantry pests)			
FLEAS	Adult: Small, very dark, wingless; actively jump. Larva: Tiny, white, slender, worm-like. Pupa: Small, oval, white cocoon stuck to pet bedding, boxes, floor.	Adult fleas feed on dogs and cats; lay eggs which fall off and hatch into larvae. Larvae live in pet sleeping area; they feed on blood excreted by the adults which falls into pet bedding or rugs. If pets sleep on furniture, flea larvae will be where eggs and dry blood fall. Larvae do not bite pets or humans. When pet is removed from premises, flea larvae continue to develop into adults.	Use flea powder with one of the dusts recommended for cat or dog. Do not treat kittens less than 1 month old. Vacuum pet sleeping area, wash pet bedding. Spray in areas where larvae occur. Do not let children come in contact with sprayed area. Adult fleas starved for blood will bite humans. Larvae are seldom seen. Aerosols for spraying on animals are not effective.
FLIES (See Cluster flies, House flies, Stable flies)			

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
HOUSE FLIES and BLOW FLIES (See also Cluster flies and Stable flies)	House flies: ¼ inch long, gray, vaguely-striped thorax, yellow behind wings, abdomen sometimes yellowish. Blow flies: Most larger than house flies; metallic green, blue, black.	House flies are usually connected with excrement, garbage or rotting material. During warm weather, life cycle from egg to adult is 6-8 days. Unlike stable flies, they do not bite and seldom swarm on screens.	Sanitation: Remove breeding material. Use larvacide on manure accumulations. Residual sprays applied to dumpsters and outside surfaces where flies rest. With the flies 6- to 8-day life cycle, garbage should be removed twice weekly. Cans should be kept clean and garbage around can area removed. Keep screens in good repair and tight. Bait: Keep baits away from children and pets. Use resin strips as recommended for cluster flies. Install fans at doorways.
INDIAN MEAL MOTH (See Pantry pests)			
LICE, human	Head lice and body lice are oval, under ⅛ inch long, gray. Crab lice are slightly smaller and wide, not long. Eggs (nits) white. Egg or "nit" attached to hair	Body lice live mainly in clothing and feed on body. Head lice live in head hair. Crab lice infest pubic hair, body hair, eyebrows and lashes and mustaches. "Nits" or eggs of head and crab lice are glued onto hairs. "Nits" of body lice are attached to clothing.	Do not treat premises for human lice. Clothing with body lice should be washed or dry cleaned. Use pesticidal shampoo for head and crab lice.
MILLIPEDES (See also Centipedes) 	Millipedes have many small legs and usually curl up like springs when disturbed.	Millipedes live under rocks, in mulch, compost, etc. They migrate or wander into houses, especially basements. They do no damage.	Spray, dust or use granules around foundation where millipedes may be hiding—under rocks, in cracks, etc.—especially around doors and windows on ground level. Remove mulch and shrubbery from next to doors and windows. Dust area and cover with polyethylene sheet (to keep down weeds) and cover with gravel. Remove or dry out breeding places. Millipedes cannot get in except through cracks or spaces around doors and windows. Tighten up and caulk.

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
OLD HOUSE BORER (See also Powderpost beetles) 	Adults: Longhorned, woodboring beetle; dark with long antennae; about ¾ inch long. Larvae: Wormlike, white, soft, wider at front end.	Live in pine or spruce (coniferous) wood only. Life cycle is from 5-7 years. An audible gnawing noise is often heard. Generally found in a single board. Seldom found in nearwood — only in sapwood. Usually only one or a very few insects are involved. Borings are like talcum powder. Holes oval, ¼ inch wide.	Remove infested timbers. Varnish or paint exposed timbers. For limited infestations: Treat by spraying with residual insecticide. For extensive infestations: Fumigate building. Hammer on wood to find infestations by sound. Where practicable, replace wood and treat wood adjacent to infested wood. Damage is seldom extensive. Will not reinfest painted or waxed wood.
PANTRY PESTS (See also Cereal insects, Cigarette beetles, Drugstore beetles, Sawtoothed grain beetle, Indian meal moth) Cigarette beetle	*Cigarette Drugstore Beetles* — Adults: Oval almost ⅛ inch long, reddish-brown with golden hairs. Larvae: Tiny, white grubs. *Sawtoothed grain beetle* — Adults: Slender, 1/10 inch long; 6 tiny teeth on each side of prothorax. Larvae: Tiny, white. *Indian meal moth* — Adults: Moths, over ¼ inch long; dark head, light band on wings behind head followed by dark band to end of wings. Scales can be rubbed off but pattern can be seen with lens. Larvae: White caterpillars with yellow or reddish-brown head; body sometimes tinted pink, green or yellow; about ½ inch long. Sawtoothed grain beetle	These insects infest stored products. They can begin in an infestation in a closed package or more often in opened packages or cans which are not used for long periods. They can spread to other packages and often wander up the walls, shelves, etc. and spread to other rooms of the house. Only damage is to stored products. Indian meal moth	Find infested materials and discard them. Clean shelves and cracks in shelves. Spray or paint shelves lightly with insecticide, especially in corners. After shelves dry, cover with new shelf paper. Keep products which are opened and not used up quickly in tight containers. *Sawtoothed grain beetle and Indian meal moth* are found in cereals, crackers, dried fruit, nuts, candy. *Cigarette beetle and drugstore beetle* are found in herbs, spices, condiments. Indian meal moth larva

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
POWDER POST BEETLES (See also Old house borer)  Powder post beetles	Adults: Tiny, dark beetles; less than ¼ inch long. Larvae: Tiny, white grubs.	Infest hardwood. Wood is usually infested before it is put into a house. Larvae kick out borings through small round holes. Usually few boards are infested. One cosmopolitan species infests bamboo and is frequently imported only to die out each time.	Inject or paint holes with residual insecticide, then close holes with wax or finish materials. Adults will not reinfest varnished, painted or waxed wood. Replace damaged timber if necessary for structural support. Damage is seldom extensive except in unoccupied buildings, sheds, etc.
SAWTOOTHED GRAIN BEETLE (See Pantry pests — usually in cereal, crackers, flour, etc. Build up in large numbers.)			
SILVERFISH (and Firebrats)	Not more than ½ inch, tapering from broad, front end to narrow tail. Long antennae and 3 tail filaments. Silverfish covered with silver scales. Firebrats mottled, darker.	Feed on starches, e.g. books, wallpaper, flour, paste, sizing, paper, linen and some other fabrics. Silverfish are found in all parts of house, especially undisturbed places. Firebrats are found in warm parts; e.g. wrapped heat pipes, etc. Often trapped in bathtubs and sink bowls accidentally.	Apply insecticide on flat surfaces around infestations — baseboards, bookshelves, storage areas. Control may not be immediate. If control is not achieved in 2-3 weeks, treat again. Corrugated cardboard boxes of books build up high infestations.
SLUGS	Snails without shells: One pair of retractable antennae on head; tapering to rear with broad lump near front; brown, spotted.	Slugs live in moist cool places, under rocks, lumber, mulch, foundation cracks. Slugs leave a slime trail which helps keep them from drying out and which they can follow going back to their daytime harborage. They eat organic matter. Often attracted to pet feeding bowls. Some low growing plants are occasionally damaged.	Place baits where slugs normally travel at night. Spray or dust area where they hide; dry out moist harborage.

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
SOWBUGS and PILLBUGS	*Oval gray arthropods; transverse-*connected plates give them the appearance of armadillos; sometimes roll up in a ball or "pill" when disturbed.	*Live in moist places, under rocks,* in cracks around foundations, under old boards and leaf piles. Become problems when they build up near doors and windows.	Sowbugs migrate inside. Caulk cracks and tighten up doors. Dry out harborage, put plastic under mulch. Use spray only in hiding places.
SPIDERS Yellow house spider	The black widow is the most dangerous spider in Maryland. It is jet black with a red hour glass on its belly. Easily recognizable. *Chirocanthium* or yellow house spider is small, yellow, white or light green.	The black widow is found in the web in rock or lumber piles, trash, sheds, water meters, empty flower pots and baskets. *Chirocanthium* enters houses in fall, makes "cocoons" on door-frames, wall and ceiling joints, inside jets of unused gas appliances. Some spiders are problems in boat houses. The brown recluse spider is sometimes introduced but does *not* persist. One introduced species from Europe sometimes lives in isolated locations.	Spray residual inside in unused areas when spiders are numerous or in areas where black widows occur. Use Ultra Low Volume (ULV) when numbers are large. Use gloves when working in areas where black widows occur.
SPRINGTAILS	Very small jumping insects. Jump by means of spring at end of tail.	Need moisture and shade. Sometimes may come from large moist planters or flower pots inside. Do no damage.	Spray around house foundation, especially in moist grassy areas next to house.
STABLE FLIES (See Cluster flies; House flies)	Resemble house flies, have small forward-projecting mouthparts under head and can bite.	Found in areas where large animals are kept. Stable flies breed in damp straw, grass clippings, etc. Does not breed in excrement or garbage.	Keep straw or grass clippings dry and turned. Larvacides can be used. Attracted to dark openings like doors and windows before rain.

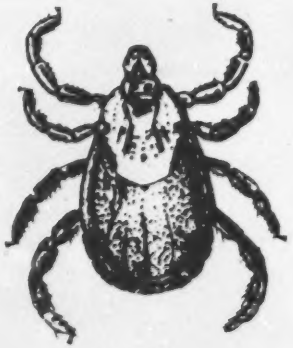
PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES

TERMITES: Most common wood infesting insect in Maryland. Main nest always in ground. Workers tunnel into house where breaks or breaches in construction are found.

Ant

Termite

TICKS
(Brown dog tick and Wood tick)



Hard 8-legged arthropods; oval, narrower at front end. Female wood ticks: brown with mottled white shield or a white dot on back. Brown dog tick: evenly brown. Both species become large and very dark gray with all legs near front when engorged.

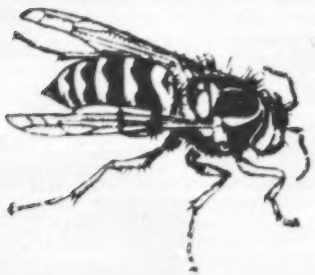
Brown dog ticks do not bite people. Can reproduce inside in winter in large numbers when dog is present.

Wood ticks (mainly the American dog tick) can bite humans and are a problem only in summer. This tick can carry Rocky Mountain Spotted Fever. Wood ticks live where hosts are present; e.g. along animal paths, on and near areas where dogs or rodents sleep. Fertilized female ticks drop from host, lay eggs: hatching "seed ticks" attach to host. Young ticks drop off and molt after each feeding.

Apply spray or dust as spot treatment along baseboards, in cracks, around pet sleeping areas, and beneath edges of carpets, rugs and appliances in infested area. Widespread treatment of pesticides outside should only be used in areas where incidence of ticks is known to be high and where danger of Rocky Mountain Spotted Fever is present. Treat dog with flea and tick powder or have vet dip dog. Large numbers of small ticks inside usually mean that Brown dog ticks are present. Remove any imbedded wood ticks on children or adults; consult physician. Advocate tick inspection twice daily when outside. Flea collars are *not* good controls for ticks.

26

27

PEST	DESCRIPTION	LIFE CYCLE AND HABITS	CONTROL OR MANAGEMENT PRACTICES
WASPS, HORNETS, and YELLOW JACKETS 	*Hornets:* Large wasps, black with white markings; about ¾ inch long. *Paper wasps:* Elongated wasps with slender abdomens; reddish-brown or brown; from ½ to ¾ inch long. *Yellow jackets:* Black and yellow wasps, smaller than hornets and less slender than paper wasps; ½ inch long or less.	Hornets build large, ball-like paper nests in shrubs and trees. Paper wasps build smaller, "comb" paper nests under eaves, overhangs and in hedges. Yellow jackets build nests below ground, under rocks, shrubs, and, for one species, in wall voids.	It is best to treat in the evening or at night when wasps are on or in the nest. Use flashlight. Direct long spray into hole or hold aerosol with pyrethrins close to hole and spray. Leave area when activity is noticed. Repeat later if needed. Most pesticides stimulate aggressive reactions; however, formulations labeled for wasp control with directions stating that it can be applied during daytime are very safe and render wasps harmless when used. Wasp stings can be fatal to susceptible people. Check with your physician.
WATERBUGS, Oriental cockroach (See cockroaches)			